COHU

3920HD Series

HDTV H.264 dome camera system

- HDTV 720p30 Image Resolution
- Sensitive Day / Night Technology
- Auto/ Manual Focus and Iris Control
- Dual H.264 / MJPEG Video CODECs
- Hybrid IP / Analog Operating Mode
- Web Server Configuration/ Operation
- NTCIP 1205 over IP Communication
- Variable Speed Positioning System
- Presets, Tours, Sector/ Privacy Zones
- IP67 Sealed and Pressurized

Cohu's 3920HD series combines the advantages of HDTV image quality, efficient H.264 compression, a proven variable speed dome drive and advanced environment protection standards for delivering a best of class dome camera system.

The 3920HD offers 720p30 with 18x imaging for delivering HD video quality from wide to narrow angle zoom settings. True day/night technology using a removable IR cut filter produces exceptional low light sensitivity to as low as 0.002 fc.

The 3920HD includes a variable hi-speed pan and tilt drive, with 360° continuous pan and +5 to -90° tilt movements. Fast preset positioning speeds result in 180° movements in less than 2 seconds.

Providing dual output stream capability, the 3920HD delivers two independently configured H.264 streams or an H.264 with MJPEG or an H.264 with analog output. Use of the IP and analog output allows integrating with analog based systems today while providing a smooth transition to HD Video over IP tomorrow.

The 3920HD provides a full function web server, allowing complete administrative and operator control capabilities. Administrative features include configuring network settings, user password assignments, setting video streaming properties, defining camera positioning presets/tours, assigning camera ID labels.

The 3920HD provides comprehensive ID labeling, allowing precise descriptors to be inserted onto the video for operator use. Camera location, presets and sector zones are defined using up to 23 characters. For direct positioning indications, the camera system can display its azimuth and elevation position in degrees as well as use compass directions.

The 3920HD is designed to operate in extreme weather with its IP67 sealed and pressurized enclosure protection. This eliminates the effects of water intrusion, pollutants and corrosives. As well, the 3920HD withstands the effects of elevated temperature, electrical and mechanical environments. Cohu guarantees years of clean, reliable images and backs it with a world-class warranty.

Helios

IP H.264 HD MJPEG DAY/NIGHT NTCIP 1205 PTZ ONVIF

3920HD Helios

HDTV H.264 dome camera system

3920HD Series Specifications

CAMERA

(See Camera Specifications Table, next page)

DOME DRIVE

Movements
- Pan Range: 360°
- Tilt Range: +5° to -90°
- Repeatability: 0.1°

Pan Speed
- Maximum Peak: 150°
- Preset Solving: (180° movement): <2.3 sec
- Manual Control: 0.1° to 80°

Tilt Speed
- Maximum Peak: 150°
- Preset Solving: (90° movement): <1.15 sec
- Manual Control: 0.1° to 40°

Features
- Pan/Tilt Control: 64 Step Variable Speed
- Presets: 64 [includes pan, tilt, zoom, focus coordinate]
- Tours: 8 [Includes up to 32 presets with individual dwell per preset]
- Sector Zones: 16 [Each includes left/right boundary, enabled/disable state]
- Privacy Zones: 8 [Each zone Includes left/right boundary, enabled/disable state]

VIDEO ENCODING

Video Streams
- Video Compression Codecs: H.264 / MJPEG
- Video Stream Resolutions: *See Table 1*
- Video Stream Frame Rates: *See Table 2*
- Video Stream Data Rates: *See Table 3*
- Camera Video Latency: 4 frames (133 msec) (Does not include network routing or client rendering latency)
- Analog Video: NTSC or PAL, using full 16:9 image compressed into 4:3

Streaming Protocols
- RTSP/RTP
- RTSP Interleaved
- HTTP Tunneling
- RTP Multicast
- MPEG Transport (H.264 + MJPEG)
- MJPEG Push using HTTP
- MJPEG Pull using HTTP

Video Connections
- Eight (8) RTSP unicast
- Eight (8) RTSP multicast
- Eight (8) RTSP interleave
- One (1) MJPEG (CLIENT pull mode)
- One (1) MJPEG (SERVER push mode)
- Unlimited RTP/UDP multicast

SECURITY

Authentication Types
- None, Basic, Digest or Cohu

User Levels
- Admin, Priv User, User, Guest

WEB SERVER CAPABILITIES

Configuration Settings
- Network, Video Stream, OSD, Presets, Zones, Security Settings and Upgrades

Control
- Pan/Tilt, Lens, Tours, Presets, Zones, Digital Zoom, Auxiliary and Recording

Browser Support
- Recommend Internet Explorer 8.x or newer

Media Player Support
- VLC, QuickTime, or any media player compliant with RFC 2326, 3984, 3550, 2435, ISO/IEC 13818-1

COMMUNICATION INTERFACES

Network
- Data Format: 802.3u (100BASE-TX)
- Network Protocols: TCP, UDP, IP IGMP, DNS, DHCP, RTP, RTSP, NTP, IPv4, HTTP, ARP
- Camera Protocols over IP: Cohu, Cohu T, NTCIP 1205, ONVIF

Serial
- Data Format: RS422, 4 wire half duplex
- Camera Protocols over Serial: Cohu, Pelco D. Contact factory for latest list.

ON-SCREEN DISPLAY (OSD)

(See OSD Configuration Table, next page)

ELECTRICAL

Input Voltage: 24 Vac or 120 Vac

Power: 110 watts w/heater on
Variation: Per Nema TS2 para 2.1.2
Interuption: Per Nema TS2 para 2.1.4
Transients: Per Nema TS2 para 2.1.6

MECHANICAL

Construction/Finish:
Powder coated aluminum. External parts corrosion protected with stainless steel fasteners.
Weight: 14 lbs (6.3 kg)
Dimensions: *See diagram*
Field Connector: 18-pin MS. Mating connector included

ENVIRONMENTAL

Operating Temperature Range: -40°F to 149°F (-40°C to 65°C)
International Protection Rating: IP67, Pressurized to 3.5 psi with dry nitrogen
Salt Spray: ASTM-B117
Vibration : Per Nema TS2 para 2.1.9
Shock: Per Nema TS2 para 2.1.10
Wind: Survivability: 120 mph (193 km/h) with 25% gust factor. Mounting bracket not included.

CERTIFICATIONS

FCC: Class A, CE (24 Vac)

SHIPPING INFORMATION

Weight: 18 lbs (8.2 kg)
Volume: 15" x 15" x 20" (381 x 381 x 508)

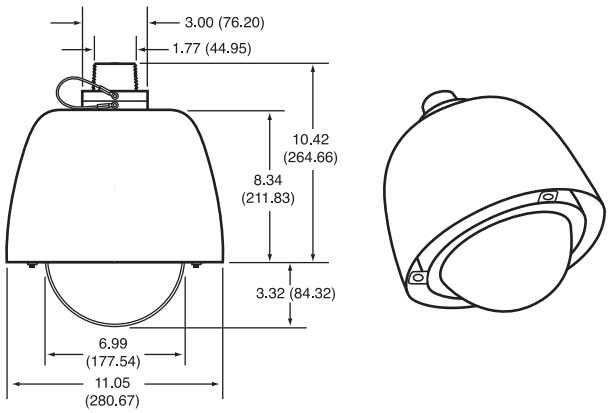
ACCESSORIES

Mounts
- Wall: 7411420-001
- Pole: 8518-2

Connector Kits
- MS Conn: 1310230-011

Cables
- CA252 Series w/120Vac MS conn.
- CA255 Series w/ 24Vac MS conn.

DIMENSIONS *in inches (mm)*



3920HD Helios

HDTV H.264 dome camera system

3920HD Series Specifications

Camera Specifications

Function	720p30 Camera
Sensor	1/3" CCD
Scanning	Progressive
Pixel Array	1296 x 966
Resolution	1280 x 720
Frame Rate	30
Camera Format	Day/Night (Removable IR Filter)
Day/Night Modes	Auto, Color, Mono
Sensitivity	*see Sensitivity Chart*
Zoom Lens	18x, 4.7 to 84.6mm
Aperture	f1.6 -> f2.8
HAFOV	57° to 3.2°
Focus	Auto/Manual [Near, Far]
Iris	Auto/Manual [Open, Close]
Digital Zoom	6x (Web Client Only)
Dynamic Range Mode	On/Off
Back Light Comp Mode	On/Off
Shutter/Integration	1/4 -> 1/10,000
White Balance	Auto/Manual [Red/Blue]

Sensitivity Specifications

720p30 x 18 Camera	Video Level	D/N Mode	Shutter	Aperture
1.8 lux (0.18 fc)	50 IRE	Color	1/60	f1.6
0.74 lux (0.074 fc)	30 IRE	Color	1/60	f1.6
0.18 lux (0.018 fc)	50 IRE	Mono	1/60	f1.6
0.02 lux (0.002 fc)	30 IRE	Mono	1/4	f1.6

Table 1 - Dual Stream Configurations / Resolutions

Stream 1	Stream 2
H264 Encoding	**H264 or MJPEG**
1280 x 720	720x480, 704x480, 640x480, 352x288, 352x240, 320x240, 176x144, 176x120, 160x120
720 x 480	720x480, 704x480, 640x480, 352x288, 352x240, 320x240
720 x 576	720x576, 704x576, 640x480, 352x288
704 x 480	704x480, 640x480, 352x240
704 x 576	704x576, 640x480, 352x288
640 x 480	640x480, 352x240, 320x240, 160x120
352 x 288	352x288, 176x144
352 x 240	352x240, 176x120
320 x 240	320x240, 160x120

Resolutions available in H264 and MJPEG Encoding Modes. Resolutions available in MJPEG Encoding Mode only.

Table 1 - Single Stream Configurations / Resolutions

Stream 1	Stream 2
H264 or MJPEG	**Analog Video**
1280 x 720	NTSC or PAL
720 x 480	NTSC
720 x 576	PAL
704 x 480	Not Available
704 x 576	
640 x 480	
352 x 288	
352 x 240	
320 x 240	

Table 2 - Frame Rate Configurations

Stream 1 Frame Rate	Stream 2 Frame Rate
30	30 -> 1
15	15 -> 1
7.5	7.5 -> 1
6	6, 3, 2, 1
5	5, 1
3.75	3.75, 1.875
3	3, 1
2	2, 1
1.875	1.875
1	1

Table 3 - Data Rate Configurations

Stream 1	Stream 2
8 Mb	N/A
6 Mb	
4 Mb	
3 Mb	
2 Mb	
1.5 Mb	
1 Mb	
512 Kb	
256 Kb	

Table 3 - Data Rate Configurations

MJPEG	Typical JPEG File Size	
Quality	**1280 x 720**	**740 x 480**
100	700 Kb	240 Kb
80	160 Kb	50 Kb
65	110 Kb	40 Kb
50	75 Kb	30 Kb
35	63 Kb	24 Kb
15	35 Kb	18 Kb

OSD Configurations

Digital IP Video On-Screen Displays								
Stream Configuration	**Cam**	**Preset**	**Sector**	**Pos.**	**Event**	**Maint**	**T/D**	**Logo**
H.264	X	X	X	X	X	X	X	X
MJPEG	X	X	X	X	X	X	X	X
H264 + H264	*See Note 1*							N/A
H264 + MJPEG	X	X	X	X	X	X	X	X
M264 + ANALOG	X	X	X	X	X	X	X	X
MJPEG + ANALOG	X	X	X	X	X	X	X	X

Note 1: User can select two OSD fields (no logo) to display only.

OSD Configurations

Analog Video On-Screen Displays								
Stream Configuration	**Cam**	**Preset**	**Sector**	**Pos.**	**Event**	**Maint**	**T/D**	**Logo**
H.264 + Analog	X	X	X	X		X		
MJPEG + Analog	X	X	X	X		X		

ORDERING INFORMATION

3920HD High Definition H.264 Dome Camera System

HD2 X – X X XX

Power Options
4 - 24 VAC Operating Power, MS Connector
5 - 120 VAC Operating Power, MS Connector

Camera Head Options
1 - 720p30 18x Camera

Software Options
0 - NTCIP 1205 Camera Control

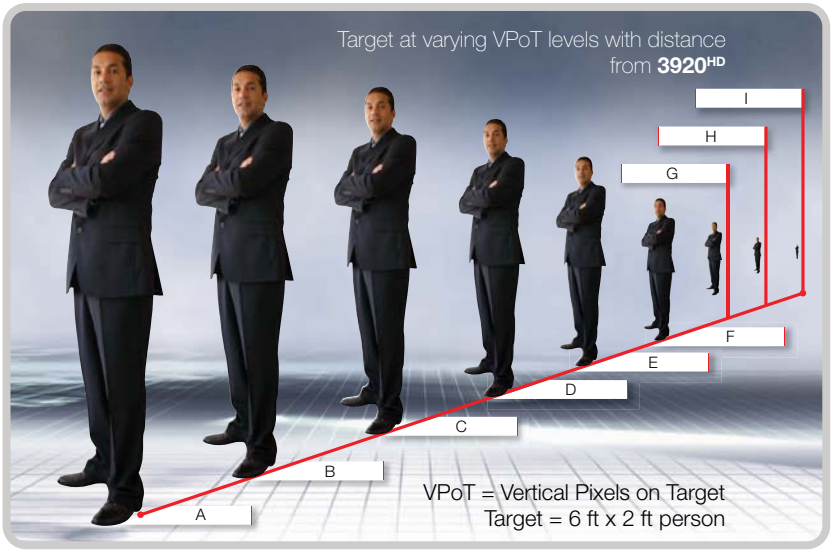
Unassigned
00 - None

3920HD Helios

HDTV H.264 dome camera system

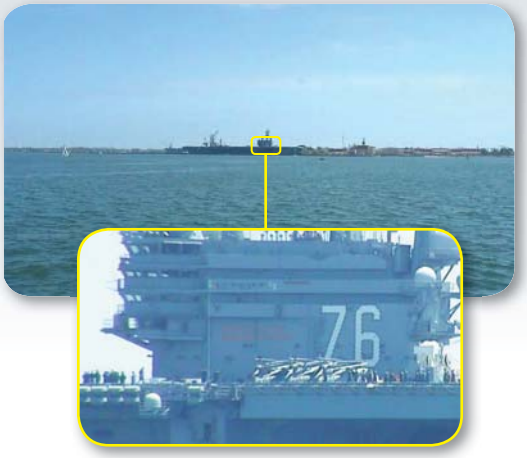
How far can I see?

Debatably, the most frequently asked question in the video surveillance realm, with no simple answer. Many variables affect the answer to this question, such as object size, object/scene contrast ratio, atmospheric conditions, daytime vs nighttime, your definition of "see" to mention just a few. The chart below is intended to provide an indication under ideal conditions the size a person would appear on a monitor screen at varying distances based on the number of vertical pixels landing on the person. You be the judge as to how far you can see this person.



Target	720p 18x Full Zoom		
	VPoT	Distance	
A	700	190 ft	58 m
B	600	225 ft	69 m
C	500	270 ft	82 m
D	400	340 ft	104 m
E	300	450 ft	137 m
F	200	680 ft	207 m
G	100	1350 ft	411 m
H	50	2735 ft	834 m
I	25	5350 ft	1631 m

The images below are scenes of San Diego Bay showing the magnification power of the 3920HD's 18x optical zoom. The Port of San Diego building and the USS Ronald Reagan are approximately 4,500 ft (1370 m) away.



Cohu reserves the right to change specifications without notice.
Trademark names are used for reference only.

COHU
Cohu, Inc. / Electronics Division

COHU ELECTRONICS
12367 Crosthwaite Circle
Poway CA 92064-1245
Tel. +1 (858) 277-6700
Fax: +1 (858) 277-0221

3920HD 01-12 Printed in USA